

ATTACHMENT 5

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BEFORE THE
SOUTH CAROLINA PUBLIC SERVICE COMMISSION
COLUMBIA, SOUTH CAROLINA

IN RE:)
)
PROCEEDING TO REVIEW) DOCKET 97-374-C
BELLSOUTH'S COST STUDIES FOR) VOLUME I
UNBUNDLED NETWORK ELEMENTS) ROUGH DRAFT

GIVEN BEFORE LAURA J. MCCARTNEY, COURT
REPORTER AND NOTARY PUBLIC, AT THE PUBLIC SERVICE
COMMISSION, 111 DOCTORS CIRCLE, COLUMBIA, SOUTH
CAROLINA, ON WEDNESDAY, DECEMBER 17 1997,
COMMENCING AT 9:30 O'CLOCK, A.M.

APPEARANCES OF COMMISSIONERS:

CHAIRMAN BUTLER
VICE-CHAIRMAN BRADLEY
COMMISSIONER SCOTT COMMISSIONER SAUNDERS
COMMISSIONER ARTHUR COMMISSIONER BOWERS
COMMISSIONER MITCHELL

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"SERVING THE LEGAL COMMUNITY SINCE 1957"

1 THAT THE DIGITAL SIGNAL IS THEN CONVERTED
2 BY THIS CENTRAL OFFICE TERMINAL BACK TO AN
3 ANALOG SIGNAL. AND IT IS TERMINATED ON AN
4 MBF THE SAME WAY THAT A COPPER CABLE WOULD
5 BE TERMINATED IF IT WAS SERVED ON A COPPER
6 LOOP. THEN BECAUSE THIS SIGNAL IS ANALOG,
7 AND THE SWITCHES NOW ARE DIGITAL, YOU
8 REQUIRE AN ADDITIONAL PIECE OF EQUIPMENT
9 WHICH COSTS \$120,000, IT'S CALLED ANALOG
10 INTERFACE UNIT, TO CONVERT THE SIGNAL BACK
11 TO DIGITAL TO GO INTO THE SWITCH.

12 THAT IS CALLED UNIVERSAL. THAT IS
13 WHAT BELLSOUTH USED IN THEIR COST STUDY.
14 TOTAL COSTS INVOLVED HERE IS ABOUT
15 \$475,000. AND I'M ONLY INCLUDING THE
16 MATERIAL COST, NOT THE INSTALLATION, THE
17 LABOR AND THAT TYPE OF THING. THE
18 FORWARD-LOOKING TECHNOLOGY AND THE
19 TECHNOLOGY THAT BELLSOUTH IS NOW DEPLOYING
20 FOR ITS OWN LOOPS IS CALLED INTEGRATED. IT
21 IS THE SAME FROM THE REMOTE UP TO THE
22 CENTRAL OFFICE. THIS IS WHERE THE BIG
23 DIFFERENCE IS.

24 SO YOU'VE GOT YOUR REMOTE. THE SAME
25 COSTS. FIBER CABLE IT GOES INTO. AND THEN

1 HOWEVER IT WAS INTEGRATED, THE REMOTE IS
2 INTERFACED WITH THE SWITCH DIRECTLY ON A
3 DIGITAL BASIS. SO THAT'S THE SWITCH. THE
4 COST -- HERE IS 135,000. THE COST OF THIS
5 FIBER IS SIGNIFICANTLY LESS, BECAUSE THE
6 INTEGRATED TECHNOLOGY IS MUCH MORE
7 EFFICIENT. THE COST OF THIS FIBER IS ONLY
8 \$15,000. IT REQUIRES A TERMINAL TO
9 INTERFACE INTO THE SWITCH THAT'S CALLED AN
10 IDT. IT IS ONLY ABOUT \$20,000. SO THE
11 TOTAL COST FOR THE INTEGRATED IS \$170,000.

12 SO YOU CAN SEE THAT THERE IS A BIG
13 DIFFERENCE. AND THE DIFFERENCE IS IN THIS
14 EQUIPMENT THAT'S IN THE CENTRAL OFFICE THAT
15 CONVERTS THE DIGITAL SIGNAL TO ANALOG AND
16 THEN BACK FROM ANALOG TO DIGITAL.

17 NOW YOU MAY ASK WHY IS THERE THE TWO
18 TYPES. THE UNIVERSAL AND THE INTEGRATED.
19 THE REASON FOR THAT IS THE UNIVERSAL WAS
20 THE FIRST ONE. AND AT THE TIME THAT IT WAS
21 INTRODUCED WAS IN THE '70'S. THE 1970'S.
22 AND AT THAT TIME ALL OF THE SWITCHES WERE
23 ANALOG. THEY WERE NOT DIGITAL. SO THE
24 SIGNAL HAD TO BE CONVERTED TO ANALOG IN
25 ORDER TO BE CROSS CONNECTED TO THE SWITCH

1 BECAUSE THE SWITCH REQUIRED IT IN ANALOG
2 FORM.

3 THEN IN THE 1980'S DIGITAL SWITCHES
4 BECAME AVAILABLE. SO AT THAT TIME THE
5 REQUIREMENT TO CONVERT THE DIGITAL SIGNAL
6 TO ANALOG WAS NO LONGER NECESSARY. AND THE
7 DIGITAL LOOP CARRIER THEN WAS INTERFACED
8 DIRECTLY WITH THE DIGITAL SWITCH ON A
9 DIGITAL BASIS.

10 WELL COMMISSIONERS, IN MY CAREER IN
11 MY 30 YEARS, I CANNOT REMEMBER OF A SINGLE
12 EVENT IN THE OUTSIDE PLANT THAT HAD SUCH A
13 PROFOUND IMPACT ON COSTS. IT AUTOMATICALLY
14 REDUCED THE COST BY ABOUT 60, 70 PERCENT BY
15 JUST THAT ONE TECHNOLOGY. IF YOU'RE
16 MANAGING A 100 MILLION DOLLAR CONSTRUCTION
17 PROGRAM, AND YOUR BUDGET IS ONLY 50 AND
18 YOU'RE TRYING TO FIND WAYS TO CUT, THIS WAS
19 A GIFT FROM HEAVEN.

20 THE OTHER WAY FOR YOU TO REDUCE THE
21 COST AND THE OTHER MAJOR BENEFIT IS THAT IT
22 SIGNIFICANTLY IMPROVED THE SERVICE.
23 BECAUSE THIS PROCESS OF CONVERTING THE
24 SIGNAL FROM DIGITAL TO ANALOG AND THEN BACK
25 UP TO DIGITAL SERIOUSLY SEVERELY IMPAIRS

ATTACHMENT 6

BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

In the Matter of : DOCKET NO. 960833-TP
: DOCKET NO. 960846-TP
Petitions by AT&T Communications of : DOCKET NO. 960916-TP
the Southern States, Inc., MCI :
Telecommunications Corporation, MCI :
Metro Access Transmission Services, :
Inc., and American Communications :
Services, Inc., and American :
Communications, Services of :
Jacksonville, Inc., for arbitration :
of certain terms and conditions of a :
proposed agreement with BellSouth :
Telecommunications, Inc., concerning :
Interconnection and Resale under the :
Telecommunications Act of 1996. :

THIRD DAY - MORNING SESSION

VOLUME 15

Pages 2146 through 2274

PROCEEDINGS: HEARING

BEFORE: CHAIRMAN SUSAN F. CLARK
COMMISSIONER J. TERRY DEASON
COMMISSIONER JULIA L. JOHNSON
COMMISSIONER DIANE K. KIESLING
COMMISSIONER JOE GARCIA

DATE: Friday, October 11, 1996

TIME: Commenced at 11:00 a.m.

PLACE: Betty Easley Conference Center
Room 148
4075 Esplanade Way
Tallahassee, Florida

REPORTED BY: H. RUTHE POTAMI, CSR, RPR
Official Commission Reporter
(904) 413-6734

APPEARANCES:
(As heretofore noted.)

DOCUMENT NUMBER - DATE

10942 OCT 11 96

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1 Q (By Mr. Lackey) Do you have a summary of
2 your testimony?

3 A Yes, sir, I do.

4 Q That you can do better than my questions?
5 Would you please give it?

6 A Yes, sir. Good morning. My name is Daonne
7 Caldwell, and I work in the cost organization that
8 provides cost studies for BellSouth
9 Telecommunications, Inc. I'm here today to sponsor
10 the cost studies that BellSouth has performed to
11 support the rates we propose for unbundled network
12 elements that will be offered to alternative local
13 exchange companies in the state of Florida.

14 We all know that this is a very significant
15 occasion and those cost studies will play a major role
16 in the Commission's ultimate decision. It may come as
17 a surprise to some, but for more than a decade
18 BellSouth has developed costs based on forward-looking
19 incremental cost methodology.

20 While each of our cost studies follows an
21 established methodology, I am going to address the
22 local loop cost study, since the loop is a very
23 important network element and one that has generated
24 much interest. In order to develop a meaningful local
25 loop cost study, it is necessary to model an efficient

1 network.

2 Opposing parties will have you believe that
3 it is not necessary to analyze the existing network as
4 a starting point; however, they are wrong. The
5 customers are where they are and the central offices
6 are where they are. BellSouth's long run incremental
7 cost studies overlays forward-looking technology on
8 the existing infrastructure, including both the
9 location of existing central offices, and the network
10 facilities which will be currently and in the future
11 serving our customers.

12 As I'm sure you know, BellSouth serves more
13 than 3.8 million residence lines and over 1.3 million
14 business lines in Florida. Some parties have
15 suggested that we should begin our loop studies by
16 identifying every loop we have. It would be extremely
17 labor intensive to stress -- excuse me -- to trace out
18 the physical makeup of each one of these loops; and,
19 in fact, that exercise is totally unnecessary since we
20 used a statistical sample to produce the same end
21 results.

22 I should note that I am not a statistician,
23 but then neither am I a person who purchases our
24 copper. My point is that we have specialists who all
25 work together to produce our cost studies. Our

1 statisticians have carefully examined our sample of
2 loops to ensure that we have the proper number to
3 validate our study.

4 While loop sample makeups provide much
5 useful information regarding the cost of loops,
6 BellSouth did not simply determine the cost of loops
7 in the existing network. Rather, BellSouth's local
8 loop cost study redesigned each sample in order to
9 reflect the forward-looking most efficient technology.

10 Loops less than 12 kilofeet in total length
11 were assumed to be served over 26-gauge copper cable,
12 and loops greater than 12 kilofeet were assumed to be
13 served via digital loop carrier over a fiber network.

14 We used the existing customers' demographics
15 in Florida to make BellSouth cost studies
16 representative of forward-looking incremental costs in
17 Florida. We have routinely and normally followed
18 these procedures in our region.

19 On August the 8th of 1996 the FCC released
20 an order proposing a methodology for the pricing of
21 local interconnection and unbundled elements. The
22 FCC's pricing methodology builds up on the long run
23 incremental costs that I have just described. Indeed,
24 the FCC coined a new phrase, "total element long run
25 incremental cost, TELRIC.

1 A TELRIC study produces the cost of a
2 network element rather than a telecommunications
3 service. I should also note that when you add a
4 service's volume sensitive cost to its nonvolume
5 sensitive cost, you have what we normally called a TS,
6 or total service, long run incremental cost study.

7 When you apply the same basic concepts to an
8 element instead of a service, you get close to what
9 the FCC calls a TELRIC study, but you have to make one
10 adjustment. Specifically, the FCC recognized that
11 certain costs might not be direct to a particular
12 service, but might be a directly attributable cost of
13 a network element, such as a local loop; for example,
14 the salary of a planning engineer whose job is to
15 analyze the outside plant network and plant cable
16 relief jobs which would not be included in any
17 service-specific cost study, because that engineer
18 designs the networks for all types of services.
19 Therefore, his or her time would be treated as a
20 shared cost in our normal service-specific incremental
21 cost studies.

22 However, when performing a study that will
23 produce the cost of any local loop, that planning
24 engineer becomes a directly attributable cost of the
25 local network loop element. Therefore, we have added

1 these directly attributable costs which we can
2 identify as being associated with a specific network
3 element to our results obtained using our basic
4 incremental cost methodology.

5 The FCC determined that it would be
6 appropriate to base prices for unbundled network
7 elements on TELRIC plus a reasonable share of
8 forward-looking joint and common costs. BellSouth has
9 indicated the appropriate common cost and developed a
10 cost factor that when applied to a TELRIC will
11 identify the share of forward-looking common costs
12 that should be included.

13 The result of adding a share of the common
14 costs to our TELRIC cost study gives us the economic
15 cost which the FCC defined in its order. While these
16 studies are somewhat complex, I believe that you will
17 be able to see that what we have done is logical,
18 complete and accurate.

19 The TELRIC loop study filed in this
20 proceeding represents the cost that BellSouth will
21 incur in the near future when provisioning loops.
22 Should this Commission find it is appropriate to price
23 unbundled network elements based on the FCC TELRIC
24 pricing methodology, BellSouth's TELRIC loop study
25 provides the basis for establishing the local loop

1 rate. Until TELRIC studies for the remaining elements
2 are completed and supplied to this Commission,
3 BellSouth recommends that the Commission recognize the
4 results of the TSLRIC studies as being the foundation
5 for the TELRIC cost study. Therefore, the TSLRIC
6 results form the price floor for these network
7 elements. This concludes my summary.

8 MR. LACKEY: Ms. Caldwell is available.

9 MR. HATCH: Madam Chairman, before we start,
10 it might be useful, since I think a lot of the
11 questions are going to result not only from the TELRIC
12 study but the underlying TSLRIC study, I believe Staff
13 has identified that and it's accompanying documents
14 from Ms. Caldwell's deposition as an exhibit. It
15 might be useful to have that done now.

16 MS. CANZANO: So you want the deposition
17 exhibit and all of the confidential -- should we just
18 identify all of our confidential documents right now?

19 MR. HATCH: I'm assuming it's both of her
20 depositions and the related exhibits.

21 MS. CANZANO: Staff has marked for
22 identification DDC-22, which consists of
23 Ms. Caldwell's deposition transcript from September
24 27th, 1996, as well as Late-filed Exhibits 1 through
25 6. Ms. Caldwell, do you have any changes to make to

E

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Application of BellSouth Corporation,)	CC Docket No. 98-121
BellSouth Telecommunications, Inc.)	
and BellSouth Long Distance, Inc.)	
for Provision of In-Region, InterLATA)	
Services in Louisiana)	

**Exhibit E:
Declaration of Robert Hall
on Behalf of MCI Telecommunications Corporation
in CC Docket No. 97-208**

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Application of BellSouth)	
Corporation, BellSouth)	
Telecommunications, Inc., and)	CC Docket No. 97-208
BellSouth Long Distance, Inc., for)	
Provision In-Region, InterLATA)	
Services in South Carolina)	

DECLARATION OF ROBERT E. HALL ON BEHALF OF MCI

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I. Introduction and Summary

1. I have been asked by MCI to prepare a discussion of the economic issues raised by BellSouth's application to provide long-distance services to its customers in South Carolina.

2. My analysis is in the framework of the Telecommunications Act of 1996. The Act seeks to create the same benefits of competition in local service that have already been achieved in long distance. At the same time, the Act recognizes that the quality and price of telephone service would be threatened by premature entry of a dominant local carrier into long-distance service. When a local carrier, still close to a monopolist in its own market, becomes a rival to the long-distance carriers serving its local customers, that local carrier may stand in the way of better and cheaper telephone service. The most profitable strategy for the local telephone company is to cease cooperation with the other long-distance carriers, now its rivals in that market, in order to promote its own service at higher prices. The 1996 Act acknowledges this adverse incentive, and prevents local telephone companies from controlling long-distance subsidiaries until there is the opportunity for vigorous and committed competition in local telephone service. Only when customers can protect themselves by switching local carriers can we be confident of retaining the benefits already achieved in the competitive long-distance market.

3. Widespread effective competition at the level of the local access loop is not imminent. In Part II, which presents my assessment of today's local telephone markets, I explore the forms that local competition will take in the next few years. I conclude, as did the Department of Justice, that the only standard of adequate local competition that sufficiently protects telephone consumers is that of irreversible investment in local service. The form of investment that is most clearly irreversible is to require the building of new local loops; this is likely to occur only in denser areas.

4. Only larger telephone customers or those in dense areas will enjoy any choice of local carriers able to provide their own connections any time soon. Instead, the overwhelming majority of customers will remain connected to the network only by the single loop owned by the historical phone company. From the vantage point of the great majority of telephone customers, the local loop is still a monopoly. Only a single supplier is able to cover costs. Yet until the building of duplicate loops is economically feasible, the irreversible investments essential to genuine local competition will take less reliable forms. Competitive local service will be offered by carriers that lease or resell the local loops of the dominant local carrier. These carriers remain dependent on the cooperation of the dominant carrier, cooperation that is only grudgingly offered under the compulsion of regulators—cooperation does not come naturally and is contrary to strong economic incentives. Thus, so long as telephone consumers mainly depend on their local wire loops, effective local competition is at risk. The historical local telephone company is here to stay for a while as a monopolist in the local loop. Telecommunications policy decisions should take its dominance as a premise.

5. There are large costs and only minor benefits from allowing the dominant local phone company to control a long-distance carrier serving its own customers. Under the existing policy of structural separation of long distance and local service, the local telephone companies have cooperated fully and productively with the independent long-distance companies who depend on the local companies for access to local loops. Consumers have enjoyed the benefits of competition in long-distance service plus cooperation between the local access providers and the long-distance carriers. Separately, regulation has limited the exploitation of monopoly power at the local level. But if the monopoly local company enters long-distance service, it becomes a rival of the independent carriers. The strategy of greatest value to its shareholders is to withdraw cooperation from the independent long-distance carriers and to channel as much business as possible to the local carrier's own long-distance arm. The result is higher prices for long-distance service due to hobbled competition.

6. The potential harm from control by the dominant local telephone company of a long-distance affiliate is not just theoretical; it has been repeatedly borne out in actual experience. In the struggle to open long distance to competition, AT&T thwarted most competition until divestiture in 1984. More recently, in those cases where a local telephone company has taken control of a long-distance

affiliate, it has proven to be the high price, not the low cost, carrier, and it has withdrawn previous cooperation with the independent long-distance carriers.

7. In services provided on a vertically integrated basis by the local telephone companies—including local toll telephone service, voicemail, and payphones—dominant local telephone companies behave precisely as economic principles predict: they make the services of their rivals expensive and inconvenient, and set their own prices well above cost. The evidence that non-cooperation and higher prices result from allowing a dominant local telephone company to enter a competitive business that depends on its local service is not ambiguous—it is overwhelming. There is no reason to expect BellSouth to behave differently.

8. My declaration explores these issues and arguments in depth. Part II assesses the development of local competition. I conclude that local telephone markets remain vulnerable to efforts of the incumbent local carriers to protect their traditional positions in local service, and that competition of the sort likely to offer genuine consumer protection is not present now nor likely to arise soon.

9. An important theme of the declaration is that, if dominant local carriers are also permitted to control long-distance affiliates selling to their local customers, the local carriers will withdraw cooperation from their long-distance rivals. The first section of Part III covers this topic. Cooperation is essential for an efficient national telephone network. Smooth operation of the network requires a high level of technical interaction among the firms making up the network, and, as technical progress continues, the need for cooperation will become even greater. Telephone customers would be injured by the breakdown of cooperation resulting when rivalry develops between the dominant local carrier and its long-distance rivals.

10. What effects can be expected from permitting BellSouth and the other Bells to control long-distance carriers that serve their local customers? This is the second major subject of Part III. Notice the careful phrasing. Nothing stops local carriers from creating long-distance carriers who serve their customers, as long as the local carrier does not control the long-distance carrier subsequently. But no Bell has chosen to do so. And nothing stops local carriers from using their expertise to create long-distance operations that serve the customers of local carriers in other regions. The Bells have shown little interest in this role, either.

11. These two facts together—that no Bell has chosen to establish an independent long-distance carrier that it does not control, nor sought to offer substantial long-distance service outside its own region—are telling. They are powerful evidence that (1) the long-distance market is competitive, and (2) the Bells' intentions for entering long distance in their own regions should be scrutinized. I reason as follows: Because there are no regulatory barriers to entry in long distance, it is implausible that any new entrant to the market—including a local carrier entering a market outside its own region—sees a profit exceeding the normal return to capital. The low level of activity in long distance by local carriers outside their regions confirms this conclusion. The long-distance industry has not contradicted the basic principle of free markets that firms enter until they depress the anticipated excess return from further entry to zero. The Bells evidently expect to gain something else by controlling long-distance carriers in their own regions. Although it is possible that there are efficiencies from offering bundled local and long-distance service, there is the danger that the primary driving force is the benefit of hobbling other long-distance carriers to the advantage of the Bells' own affiliates.

12. Part IV addresses the issue of what the Bells might have to offer to the long-distance market. Would Bell control of long-distance subsidiaries improve long-distance competition? Data on prices and assessments of quality demonstrate that, since divestiture, prices have fallen dramatically and continuously right through the present, while service has improved in quality. The market is already competitive enough so that a Bell long-distance affiliate is unlikely to increase the level of competition anywhere near enough to offset the adverse effects described above.

13. Could the Bells, if providing long distance, offer anything the current market structure cannot? To find benefits of a dominant local carrier controlling a long-distance subsidiary to serve the same customers, we must look to specific efficiencies resulting from its control of the long-distance subsidiary. Benefits only qualify if the efficiencies cannot be achieved by contracts that preserve the protection of structural separation. For example, local carriers could bill their customers for long-distance purchases from unaffiliated carriers (as many do today), so this combined billing not a benefit specific to a Bell's entry into long distance.

14. A single phone supplier of bundled services is something many customers have indicated they prefer. In markets where local competition develops, effective competition among a number of integrated local-long-distance carriers will provide a variety of competitively priced alternatives.

15. Part V sums up the assessment of local telephone service markets, the assessment of long-distance telephone service markets, and the effects of control by a local telephone company of a long-distance subsidiary serving its own customers. The net effect is that that we have little to gain and much to lose.

16. Part VI of the declaration addresses the analysis of BellSouth's experts in this proceeding. Part VII concludes my declaration.

II. Local Telephone Markets

17. Conditions in local telephone markets are a central issue in current policy decisions about long distance. Except for larger business customers, it is not practical for long-distance carriers to make their own connections to telephone customers. Instead, a long-distance call travels over circuits controlled by local telephone companies at both ends of the call. If local telephone markets were as competitive as the long-distance market—where customers have active choices among many rivals—unregulated markets would deliver efficient and inexpensive service, including access service to long-distance carriers. Instead, the overwhelming majority of telephone users have no effective choice at all about local service. The only alternative to the historical local telephone company is wireless service, which is expensive and of lower quality.

18. The development of competition in local markets must be irreversible to provide permanent protection to the consumer. Otherwise, permanent changes in the structure of the telephone system—in particular, in the relations between long-distance and local carriers—may occur as a result of temporary changes in local markets. The result could be a telephone system with all of the defects of the old monolithic AT&T—monopoly in local markets with the incentive and power to obstruct competition in the long-distance market.

19. The effective development of competition in local telephone services depends on cooperation among competing firms. Cooperation among rivals does not come naturally—it is the result of regulatory intervention. My discussion of these issues begins with a general consideration of the tension between cooperation and competition. Many of these issues also arise in the long-distance market, if local carriers are permitted to control long-distance subsidiaries.

A. How Cooperation and Competition Benefit Consumers

20. In the telephone system, as in many other industries, firms have vertical relations, where upstream firms are suppliers to downstream firms, as well as horizontal relations as competitors. Supplier relations require cooperation, especially in the technically sophisticated telephone industry. On the other hand, the consumer is best served when horizontal relations are completely uncooperative—when one seller actively competes for business by offering better prices and products than other sellers.

21. Absent vertical integration, upstream firms generally cooperate with their downstream customers. But horizontal rivals in the same market resist cooperating with each other—cooperation is the antithesis of competition. Once an upstream supplier integrates vertically into the downstream market, it becomes the rival of its downstream customers. Accordingly, it is unrealistic to expect the upstream firm to cooperate with its rivals in the downstream market. Yet cooperation between upstream and downstream firms is essential for consumer welfare.

22. The larger the role of the vertically integrated firm in the upstream market, the greater the strain between cooperation and rivalry. When the upstream market is competitive, and no seller has a significant market share, failure of a vertically integrated firm to cooperate is innocuous—the downstream purchaser can find an alternative upstream supplier who will cooperate if the vertically integrated supplier is uncooperative. Further, competitive markets can find the socially optimal degree of vertical integration. If there are efficiencies of integration, then competitive markets take the form of competition among many vertically integrated firms.

23. On the other hand, when the upstream seller has a significant share of the upstream market, the breakdown of cooperation with downstream customers upon vertical integration of the upstream seller becomes important. Unless cooperative upstream sellers can completely displace the sales of the less cooperative vertically integrated firm, the tension between cooperation and rivalry will arise; the customers who remain with the uncooperative vertically integrated firm in the downstream market will suffer from the lack of cooperation.

24. Two general principles emerge from this analysis: First, vertical integration into a downstream market merits scrutiny whenever the upstream seller has a significant role in the upstream market. Second, the social costs of the degradation of cooperation with downstream rivals that will inevitably accompany vertical integration need to be reckoned against any efficiencies that may result from the introduction of vertical integration.

25. The policy chosen by Congress for the telephone system, enforced cooperation through regulation, requires firms to act contrary to their shareholders' interests by cooperating with their downstream rivals by providing them with information and consulting help, facilitating interconnection, debugging problems jointly, and in hundreds of other ways.

26. When the upstream activity of the dominant firm is regulated, the disincentive for cooperation is much greater, because the dominant firm will attempt to capture profit from downstream activities that would be available from high prices in the upstream market absent regulation. In the telephone industry, one of the ways local carriers can escape the constraint of regulation in local service is by limiting the role of rival long-distance carriers and selling over-priced long-distance services to its captive local customers. The disincentive for cooperation is just as powerful under price-cap regulation as under traditional rate-of-return regulation.

27. When the product is a standardized commodity, cooperation between upstream sellers and downstream purchasers is least important. By the same token, cooperation is likely to be most important when the upstream and downstream functions have complex technical relations. The relationship

between a local and a long-distance carrier is highly technical, and is becoming more so, as increasing intelligence is added to the national telephone system.

B. Cooperation and Competition in the Telephone System

28. In the contemporary American telephone industry, the local carriers are vertically integrated in all network functions except long distance. Access, switching, and transport within the boundaries of the LATAs are all handled by the local carriers. Regulatory barriers to entry in these network functions have largely disappeared. The intent of modern telecommunications policy is to rely on competition to replace regulation. As a result, the issue of cooperation between the local carriers—still dominant in all markets except long distance—and their rivals is arising more and more frequently. To date, both state and federal regulatory policies have pursued enforced cooperation at every level except long distance.

29. Local toll markets demonstrate how vertical integration undermines cooperation—incumbent local carriers uniformly deny their rivals even the most elementary forms of cooperation, such as the use of convenient dialing methods, unless forced by regulators. The local carriers' failure to cooperate with their rivals places the rivals at a large disadvantage and gives the local carriers continuing dominance in many local toll markets. I believe the price and convenience of local toll services would be significantly lower if the local carriers cooperated with local toll competitors.

30. There are other examples which demonstrate the adverse effect of vertical integration on cooperation. For example, independent voicemail vendors are heavily dependent on local carrier cooperation. After the local carriers were permitted to integrate vertically into voicemail in 1988, cooperation with independent vendors fell dramatically. Almost immediately after the carriers were permitted to enter the voice messaging market, several of them filed tariffs that increased the costs of independent answering services by astronomical amounts. Several local carriers deny call forwarding on busy or no answer in connection with answering services, even though it is available to other customers.